

STATIC DATARACE DETECTION FOR MULTITHREADED OBJECT-ORIENTED APPLICATIONS

ABSTRACT

5 A static datarace detection method (and apparatus) for multithreaded
applications includes inputting a set of input information including a
multithreaded context graph (MCG) representation of a multithreaded application,
processing the set of input information, and outputting a statement conflict set
(SCS). The SCS is a set of statement pairs that may exhibit dataraces. The
10 processing of the set of information includes initializing a synchronization object
set for each of a plurality of MCG nodes, performing a nested traversal on the
MCG to identify pairs of MCG nodes which are not mutually synchronized, and
examining each pair of MCG nodes which are not mutually exclusive to
determine if pairs of statements in the nodes represent a datarace by considering
15 objects that can be accessed by the statements.